

REMARKS

Claims 1-25 and 27-44 remain in the present application. Applicants respectfully request further examination and reconsideration of the rejections based on the arguments set forth below.

Allowable Subject Matter

Applicants would like to thank the Examiner for the indication that Claims 37, 43 and 44 would be allowable if rewritten in independent form.

Claim Rejections – 35 U.S.C. §102(b)

Claims 28-31 are rejected under 35 U.S.C. §102(b) as being anticipated by United States Patent Number 6,188,394 to Morein et al. (hereafter referred to as “Morein”). Applicants have reviewed the cited reference and respectfully submit that the embodiments of the present invention as recited in Claims 28-31 are neither anticipated nor rendered obvious by Morein for the following reasons.

Applicants respectfully directs the Examiner to independent Claim 28 that recites a method for reading a frame buffer comprising (emphasis added):

- receiving an address corresponding to a pixel;
- transforming the received address into at least one subpixel address;
- reading at least one subpixel from the frame buffer using at least one subpixel address, wherein the frame buffer is a single memory comprising a plurality of pixels, wherein each pixel comprises a plurality of subpixels; and
- blending the at least one subpixel to create a pixel value.

Independent Claims 29-31 recite limitations similar to independent Claim 28.

Applicants respectfully submit that Morein fails to teach or suggest the limitations of “reading at least one subpixel from the frame buffer” as recited in

independent Claim 28. As described and claimed in the present application, a subpixel address is used to read at least one subpixel from a frame buffer.

In contrast to the claimed embodiments, Applicants understand Morein to teach a sample memory for storing sample sets (Abstract). Since samples as taught by Morein are distinct from subpixels as claimed, Morein teaches away from the claimed embodiments by teaching a memory for storing samples instead of subpixels as claimed. Additionally, Morein distinguishes sample memories from frame buffers by teaching that memory 94 is slower than frame buffer 90 (col. 8, lines 53-58). As such, Morein further teaches away from the claimed embodiments by teaching the use of a sample memory instead of a frame buffer as claimed.

Additionally, Applicants respectfully submit that Morein fails to teach or suggest the limitations of “supplying the created pixel value as if it were a pixel value at the received address” as recited in independent Claim 29. As described and claimed in the present application, at least one subpixel of a given subpixel address are blended to create a pixel value to be supplied as if it were a pixel value at the received address.

In contrast to the claimed embodiments, Applicants understand Morein to teach the retrieval of a sample set (col. 4, lines 9-14). Morein teaches that a sample set, either in compressed form in a frame buffer or in uncompressed form in a sample memory, is not blended (col. 2, lines 46-65; col. 5, lines 44-47). As such, Morein teaches away from the claimed embodiments by teaching the access of unblended data instead of blended subpixels as claimed.

For these reasons, Applicants respectfully submit that independent Claim 28 is neither anticipated nor rendered obvious by Morein, thereby overcoming the 35 U.S.C. §102(b) rejections of record. Since independent Claims 29-31 contain limitations similar to those discussed above with respect to independent Claim 28, independent Claims 29-31 also overcome the 35 U.S.C. §102(b) rejections of record. Thus, Claims 28-31 are therefore allowable.

Claim Rejections – 35 U.S.C. §103

Claims 1-4, 9-10, 13, 15-17, 19, 21-23 and 32-35

Claims 1-4, 9-10, 13, 15-17, 19, 21-23 and 32-35 are rejected under 35 U.S.C. §103(a) as being unpatentable over Morein in view of United States Patent Number 5,854,637 to Sturges (hereafter referred to as “Sturges”). Applicants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 1-4, 9-10, 13, 15-17, 19, 21-23 and 32-35 are not rendered obvious by Morein in view of Sturges for the following reasons.

Applicants respectfully directs the Examiner to independent Claim 1 that recites a method for providing antialiased memory access comprising (emphasis added):

receiving a request to access a memory address; and
determining if the memory address is within a virtual frame buffer
and, if so, performing the following:
transforming the memory address into at least one physical
address within a frame buffer utilized for antialiasing, wherein said
frame buffer is a single memory for containing data of a plurality of
subpixels corresponding to a pixel of said virtual frame buffer; and
accessing data of a subpixel at the at least one physical
address within the frame buffer.

Independent Claims 9, 15, 21 and 32 recite limitations similar to independent Claim 1. Claims 2-4 depend from independent Claim 1 and recite further limitations to the claimed invention. Claims 10 and 13 depend from independent Claim 9 and recite further limitations to the claimed invention. Claims 16-17 and 19 depend from independent Claim 15 and recite further limitations to the claimed invention. Claims 22 and 23 depend from independent Claim 21 and recite further limitations to the claimed invention. Claims 33-35 depend from independent Claim 32 and recite further limitations to the claimed invention.

The rejection states that Morein fails to teach or suggest the limitations of “determining if the memory address is within a virtual frame buffer” as recited in independent Claim 1. Applicants concur.

Applicants respectfully submit that Sturges, either alone or in combination with Morein, also fails to teach or suggest the limitations of “determining if the memory address is within a virtual frame buffer” as recited in independent Claim 1. As described and claimed in the present application, a determination is made as to whether a memory access is within a virtual frame buffer.

In contrast to the claimed embodiments, Applicants understand Sturges to teach a virtual frame buffer device (VFBD) routing a graphics request to a frame buffer within physical memory (Figure 3; col. 7, lines 2-8). Specifically, Sturges teaches that the VFBD intercepts operations based on their type (e.g., graphical), and is silent with regard to interception based upon a corresponding memory address. As such, Applicants respectfully submit that Sturges fails to teach or suggest the determination of whether a memory address is within a virtual frame buffer as claimed. Moreover, even assuming arguendo that the

VFBD does determine whether a memory address is within frame buffer 20 as claimed, Sturges teaches away from the claimed embodiments by teaching that frame buffer 20 is for storing graphical data (line 67 of col. 6 through line 1 of col. 7) instead of a virtual frame buffer for storing address mappings as claimed.

Furthermore, Applicants respectfully submit that no suggestion or motivation to combine Morein and Sturges in the claimed fashion has been shown sufficiently to establish a prima facie case of obviousness, as discussed in MPEP §2143. Applicants respectfully submit that neither Morein nor Sturges, either explicitly or inherently, provide a motivation or suggestion to combine the two references in the claimed fashion. Moreover, the references explicitly teach away from the combination. For example, Morein teaches the use of a frame buffer (e.g., 90 of Figure 4), as opposed to system memory, to provide fast access to graphical data to improve system efficiency (Figure 4; col. 8, lines 53-65). However, Sturges teaches the use of a portion of system memory to store graphical data, which Morein expressly teaches away from. As such, if Morein and Sturges were combined in the claimed fashion, Applicants respectfully submit that the efficiency of the system taught by Morein would be decreased given the use of slower memory. Consequently, Applicants respectfully submit that one skilled in the art would not be motivated to combine Morein and Sturges in the claimed fashion.

For these reasons, Applicants respectfully submit that independent Claim 1 is not rendered obvious by Morein in view of Sturges, thereby overcoming the 35 U.S.C. §103(a) rejections of record. Since independent Claims 9, 15, 21 and 32 contain limitations similar to those discussed above with respect to independent Claim 1, independent Claims 9, 15, 21 and 32 also overcome the

35 U.S.C. §103(a) rejections of record. Since dependent Claims 2-4, 10, 13, 16-17, 19, 22-23 and 33-35 recite further limitations to the invention claimed in their respective independent Claims, dependent Claims 2-4, 10, 13, 16-17, 19, 22-23 and 33-35 are also not rendered obvious by Morein in view of Sturges. Thus, Claims 1-4, 9-10, 13, 15-17, 19, 21-23 and 32-35 are therefore allowable.

Claims 5-6, 11-12, 18 and 25

Claims 5-6, 11-12, 18 and 25 are rejected under 35 U.S.C. §103(a) as being unpatentable over Morein in view of Sturges, and further in view of United States Patent Number 5,664,162 to Dye (hereafter referred to as "Dye"). Applicants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 5-6, 11-12, 18 and 25 are not rendered obvious by Morein in view of Sturges and further in view of Dye for the following reasons.

Applicants respectfully submit that Dye, either alone or in combination with Morein and/or Sturges, fails to cure the deficiencies of the Morein/Sturges combination discussed above with respect to independent Claims 1, 9, 15 and 21. Specifically, Applicants respectfully submit that Dye also fails to teach or suggest "determining if the memory address is within a virtual frame buffer" as recited in independent Claims 1, 9, 15 and 21. Consequently, since Claims 5-6, 11-12, 18 and 25 recite further limitations to the invention claimed in their respective independent Claims, Claims 5-6, 11-12, 18 and 25 are not rendered obvious by Morein in view of Sturges and further in view of Dye. Thus, Claims 5-6, 11-12, 18 and 25 overcome the 35 U.S.C. §103(a) rejections of record, and are therefore allowable.

Claims 7-8, 14, 20, 27 and 38-42

Claims 7-8, 14, 20, 27 and 38-42 are rejected under 35 U.S.C. §103(a) as being unpatentable over Morein in view of Sturges, and further in view of United States Patent Number 5,594,854 to Baldwin et al. (hereafter referred to as “Baldwin”). Applicants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 7-8, 14, 20, 27 and 38-42 are not rendered obvious by Morein in view of Sturges and further in view of Baldwin for the following reasons.

Applicants respectfully submit that Baldwin, either alone or in combination with Morein and/or Sturges, fails to cure the deficiencies of the Morein/Sturges combination discussed above with respect to independent Claims 1, 9, 15, 21 and 32. Specifically, Applicants respectfully submit that Baldwin also fails to teach or suggest “determining if the memory address is within a virtual frame buffer” as recited in independent Claims 1, 9, 15, 21 and 32. Consequently, since Claims 7-8, 14, 20, 27 and 38-42 recite further limitations to the invention claimed in their respective independent Claims, Claims 7-8, 14, 20, 27 and 38-42 are not rendered obvious by Morein in view of Sturges and further in view of Baldwin. Thus, Claims 7-8, 14, 20, 27 and 38-42 overcome the 35 U.S.C. §103(a) rejections of record, and are therefore allowable.

Claims 24 and 36

Claims 24 and 36 are rejected under 35 U.S.C. §103(a) as being unpatentable over Morein in view of Sturges, and further in view of United States

Patent Number 5,623,692 to Priem et al. (hereafter referred to as "Priem"). Applicants have reviewed the cited references and respectfully submit that the embodiments of the present invention as recited in Claims 24 and 36 are not rendered obvious by Morein in view of Sturges and further in view of Priem for the following reasons.

Applicants respectfully submit that Priem, either alone or in combination with Morein and/or Sturges, fails to cure the deficiencies of the Morein/Sturges combination discussed above with respect to independent Claims 21 and 32. Specifically, Applicants respectfully submit that Priem also fails to teach or suggest "determining if the memory address is within a virtual frame buffer" as recited in independent Claims 21 and 32. Consequently, since Claims 24 and 36 recite further limitations to the invention claimed in their respective independent Claims, Claims 24 and 36 are not rendered obvious by Morein in view of Sturges and further in view of Priem. Thus, Claims 24 and 36 overcome the 35 U.S.C. §103(a) rejections of record, and are therefore allowable.

CONCLUSION

Applicants respectfully submit that Claims 1-25 and 27-44 are in condition for allowance and Applicants earnestly solicit such action from the Examiner.

The Examiner is urged to contact Applicants' undersigned representative if the Examiner believes such action would expedite resolution of the present application.

Please charge any additional fees or apply any credits to our PTO deposit account number: 23-0085.

Respectfully submitted,

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